

# SC WaterWays

answering today's water resource challenges for future generations

## Rain Garden Plants: *Iris versicolor* and *Iris virginica*

Sarah A. White, Clemson University and  
Teresa Lott, Clemson Extension Service

January 2017

A rain garden is a shallow (6 – 12 inch deep) vegetated depression designed to capture stormwater runoff and allow the water to soak into the soil. These gardens can function as natural filters that improve water quality, provide wildlife habitat and feature beautiful native, perennial plants. *Iris versicolor* and *Iris virginica*, from the iris (Iridaceae) family, are two native plant species suited for use in rain gardens. Their common names, as they are virtually indistinguishable, include: blue flag, great blue flag, harlequin blue flag, water flag, poison flag, northern blue flag, southern blue flag, and dagger flower.

### Telling the species apart

It is difficult to differentiate between *Iris versicolor* and *Iris virginica* as both have similar growth habits, floral colors, and bloom times. In fact, they are often sold interchangeably in the trade as blue flag iris. One major trait differentiating the two may be their native ranges, but because these ranges overlap, this distinction cannot be used as the primary distinguishing factor. The signal (the colorful patch on the sepal) of each may be used to distinguish the two species. The signal of *Iris versicolor* is greenish-yellow, rather flat, with few to no hairs and surrounded by a background of dark purple veins against a more or less white background. The signal of *Iris virginica* tends to be bright yellow, usually with a lot of obvious soft hairs with veining not as prominent as in *Iris versicolor*. Another method for differentiating between the two species is that of the height of leaves along the flower-stem (cauline leaves) (1). The cauline leaves of *I. virginica*

typically extend above the flowers while the cauline leaves of *I. versicolor* are usually shorter or similar in height to the flowers.

### History and Traditions

Harlequin blue flag is the provincial flower of Québec (Canada). It is also thought that the fleur-de-lis resembles the iris flower with 3 petals tied with a band. The fleur-de-lis is a heraldic device for the French royal family and is an official state symbol in Louisiana.

The dried roots of *I. versicolor* and *I. virginica* were harvested in late summer or early fall by multiple Native American tribes and used as de-toxicants (liver and kidney), dermatological aids, and pain-relievers (2, 3, 4). Iris roots are toxic if not prepared properly. *Iris virginica* may have been one of the iris species used by Seminole Indians to treat shock induced by an alligator-bite. The Potawatomi tribe used *Iris versicolor* leaves to weave mats and baskets (4).



Figure 1. *Iris versicolor* in the Sustainable Landscape Demonstration Garden at Clemson University.

Herbal medicine uses iris rhizomes to generate medicinally active treatments. Many compounds are contained within the roots of blue flag iris including starch, tannins, volatile oils, resins, organic acids, and alkaloids (1). The compounds considered to be medicinally active are the oleoresinous compounds. When extracted, this compound, often referred to as iridin (irisin or irisine), can induce low to moderate toxicity in humans or livestock if ingested. Compounds exuded from the rhizome can also serve as a skin irritant, so gloves should be worn when dividing clumps.

### Use and Benefits

Showy, masses (3 to 5 per flower stalk) of blue, violet-blue, to purple flowers compliment many plants within the landscape. Blue flag irises provide splashes of color that add interest to any garden, while the root system works to stabilize soil and reduce erosion. Blue flag iris “fit” the look of cottage gardens, rain gardens, or riparian buffers around ponds; however, they perform best in conditions where consistent moisture is available. They prefer moderate-to-wet landscape situations and will go into early dormancy in prolonged drought conditions, yet will not be negatively impacted long-term..

Blue flag irises are less prone to the pests and diseases traditionally associated with bearded irises in the landscape. However, snails may eat foliage while water rodents (muskrats) may eat the rhizomes (2). Blue flag iris flowers attract hummingbirds, butterflies, beneficial insects, and native bees; they are rarely browsed by deer or rabbits, and can serve as a “deer-tolerant” plant species in the landscape.

### Planting and Care

Plant in swaths or drifts to provide natural looking effect in garden. Blue flag iris typically grow near or within bogs, fens, marshes, wet meadows, forested wetlands, or along the riparian zone of water bodies. Therefore, they are best suited for rain garden sites that maintain consistent and/or persistent moisture. They should not



Figure 2. Iris flowers in bloom.

Table 1. Plant preferred site conditions	
<i>Iris versicolor</i> (Northern blue flag iris)	<i>Iris virginica</i> (Southern blue flag iris)
<b>Light:</b> Full sun to part shade.	<b>Light:</b> Full sun.
<b>Zones:</b> 2 – 7	<b>Zones:</b> 5 – 9
<b>Origin:</b> Eastern United States.	<b>Origin:</b> United States.
<b>Type:</b> Herbaceous Perennial.	<b>Type:</b> Herbaceous Perennial.
<b>Moisture:</b> Moderate to wet soils or in shallow standing water (2 – 4”).	<b>Moisture:</b> Prefers consistently wet soil.
<b>Moisture timing:</b> Prefers consistent moisture throughout the season.	<b>Moisture timing:</b> Prefers consistent moisture throughout the season.
<b>Soil:</b> Tolerates flooded, clay, alkaline to acidic, loamy soils.	<b>Soil:</b> Tolerates flooded, clay, alkaline to acidic, loamy soils.

be used in rain garden settings that will mainly be dry because plant growth, floral display, and sometimes survival will be diminished.

In the southeast, it is best to divide and transplant blue flag iris in the fall after flowering, but divisions can also be made in early- to mid-spring if necessary. Blue flag irises prefer moist soils; thus adequate irrigation is necessary to aid in establishment of new plantings. Blue flag irises tolerate a range of soil types and pH, but prefer a soil with pH between 6.5 and 7.0 that is rich with organic matter.

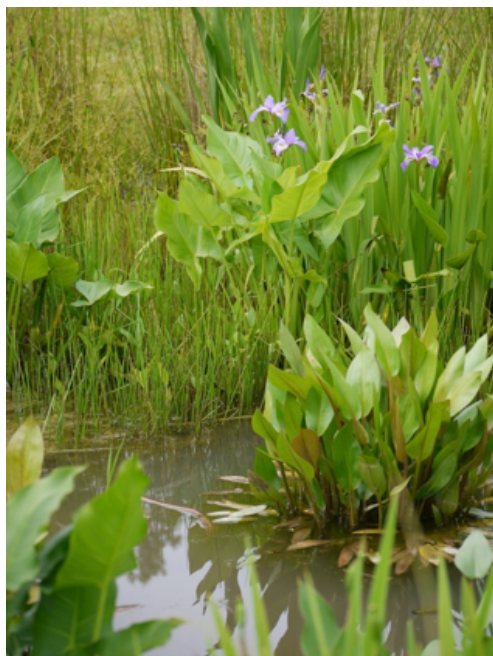


Figure 3. Iris planted along the edge of a pond.

Table 2. Design considerations - growth habit and plant interest	
<i>Iris versicolor</i> (Northern blue flag iris)	<i>Iris virginica</i> (Southern blue flag iris)
<b>Height &amp; Width:</b> 2 – 2.5' h x 2' w	<b>Height &amp; Width:</b> 1 - 3' h x 2' w
<b>Spacing:</b> 2 – 2.5'	<b>Spacing:</b> 2 – 3'
<b>Growth rate:</b> Moderate clumping.	<b>Growth rate:</b> Moderate clumping.
<b>Habit:</b> Clump-forming.	<b>Habit:</b> Clump-forming, creeping.
<b>Foliage:</b> Arching, upright, sword like foliage with a blue-green tint.	<b>Foliage:</b> Arching, upright, sword like light- to medium-green foliage.
<b>Flower:</b> 3 – 4" violet-blue to purple flowers with delicately veined, yellow throats bloom from May to July.	<b>Flower:</b> 3 - 4" slightly fragrant, blue to violet-blue flowers with delicately veined yellow throats bloom from May to July.
<b>Fall – winter interest:</b> None.	<b>Fall – winter interest:</b> None.

## Garden Design

Blue flag irises adapt well to any style of garden whether formal or informal. In the rain garden, use it in clusters of three, five, seven, or greater or in swaths to yield a consistent vegetative backbone through the garden. The medium-to silvery-green or blue-green foliage provides an excellent backdrop to show off other plant species. Because blue flag iris are moderately tall herbaceous perennials, they should be used near the middle of the border or nearer to the edge of the pond so as not to block visibility of other plants in the garden.

Blue flag irises pair well with other perennials by providing a touch of deep blue or purple that helps provide contrast for other warm-toned, flashy herbaceous perennials and annuals. Consider pairing blue flag iris in front of tall, showy perennials such as Joe-Pye weed (*Eutrochium purpureum*), blue mistflower (*Conoclinium coelestinum*), and scarlet rosemallow (*Hibiscus coccineus*), or behind smaller herbaceous perennials such as black-eyed susan (*Rudbeckia fulgida*), cardinal flower (*Lobelia cardinalis*), soft-rush (*Juncus effusus*), redhot poker (*Kniphofia uvaria*), columbine (*Aquilegia canadensis*), and many other rain garden friendly species.

## References

- <sup>1</sup> Rook, E.J.S. 2002. Iris versicolor: Blue Flag. Accessed: 15 February 2012. <<http://www.rook.org/earl/bwca/nature/aquatics/irisver.html>>.
- <sup>2</sup> Plants for a Future Database. Iris versicolor- L. Accessed: 15 February 2012. <<http://www.pfaf.org/user/Plant.aspx?LatinName=Iris+versicolor>>.
- <sup>3</sup> Immel, D.L. 2001. Plant Guide for Virginia Iris (*Iris virginica* L.) USDA-Natural Resources Conservation Service, National Plant Data Center, c/o Environmental Horticulture Department, University of California-Davis.
- <sup>4</sup> Smith, H. H. 1933. Ethnobotany of the Forest Potawatomi Indians. *Bulletin of the Public Museum of the City of Milwaukee*. 7: 1-230

All images: S.A. White.

With appreciation to content reviewers, Dr. Matthew Chappell, University of Georgia, and Dr. Janet Cole, Oklahoma State University.  
Executive Editor: Katie Buckley, Clemson University Center for Watershed Excellence.

[www.clemson.edu/carolinaclear](http://www.clemson.edu/carolinaclear)



Carolina Clear is a program of the Clemson Extension Service. Clemson University Cooperative Extension Service offers its programs to people of all ages, regardless of race, color, gender, religion, national origin, disability, political beliefs, sexual orientation, gender identity, marital or family status and is an equal opportunity employer.